The Benefits of Buffers

Despite new and innovative water quality improvement strategies, riparian buffers continue to be one of the most reliable mechanisms for removing pollutants from runoff. Referred to as "the last line of defense," buffers adjacent to local waterways provide backup for upslope BMPs. They also help to prevent land uses from encroaching into sensitive areas. Riparian buffers:

- Control streambank erosion and flooding
- Promote infiltration and groundwater recharge
- Provide food and cover for fish and other aquatic life
- Provide shade and decrease water temperatures
- Provide habitat for wildlife
- Provide recreational opportunities
- Reduce sediment up to 97 percent
- Reduce nitrogen up to 80 percent
- Reduce phosphorus up to 77 percent

The Chesapeake Bay Local Assistance Department

The Chesapeake Bay Local Assistance Department (CBLAD) assists localities with all aspects of administering their local Bay Act Programs. Services range from reviewing programs and site plans and providing training to administering grant funds. The Department has provided millions of dollars in grant funding to localities to support local Bay Act Programs. The Department also performs Local Implementation Reviews to provide additional feedback to localities on the implementation of their programs.

The mission of the Chesapeake Bay Local Assistance Department is to protect the public interest in the Chesapeake Bay and other state waters from pollution impacts associated with the use and development of land. This will be accomplished in a manner that balances the objectives of water quality protection and economic development, promoting sound land use planning and management measures.

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Virginia's
Chesapeake Bay Preservation Act
& Local Bay Act Programs

Working Together to Protect Streams, Rivers, and the Bay

The Chesapeake Bay Preservation Act

For more than a decade, Virginia's Chesapeake Bay Preservation Act has been protecting water quality in the Chesapeake Bay and its tributaries. Through the implementation of sensible, straightforward, water protection measures, local governments implementing Bay Act Programs have been successful in their efforts to manage sources of pollution across the Chesapeake Bay watershed.

Water is one of the Commonwealth's most precious resources. Abundant, clean water is important for both our health and our economy. In fact, the Bay Act begins with the statement that "Healthy state and local economies and a healthy Chesapeake Bay are integrally related."

The Virginia General Assembly passed the Chesapeake Bay Preservation Act (the Bay Act) in 1988 on the premise that land can be used and developed in ways that minimize impacts on water quality. The Bay Act and the Chesapeake Bay Preservation Area Designation and Management Regulations, adopted in 1989, establish a cooperative program between state and local governments aimed at reducing nonpoint source pollution (polluted runoff). The program is designed to improve water quality in the Chesapeake Bay and its tributaries, and it promotes the application of sound land use planning and management practices on environmentally sensitive lands.

"Healthy state and local economies and a healthy Chesapeake Bay are integrally related; balanced economic development and water quality protection are not mutually exclusive."

—The Virginia Chesapeake Bay Preservation Act

Water Quality and the Chesapeake Bay

With a watershed encompassing 64,000 square miles, the Chesapeake Bay is North America's largest estuary. Through its tributaries, water from six states — Virginia, West Virginia, Delaware, Maryland, New York, and Pennsylvania and the District of Columbia — drains into the Chesapeake Bay. Fifteen million people and more than 3,000 species of plants and animals call the watershed home. The vast amount of land in the watershed, along with the large number of people, makes wise land use management especially important in protecting the water quality of the bay.

Page Stegner, in her collection of reflections on rivers, explains that "A river, like all natural forces, is not indifferent or unresponsive to humankind." We have learned this lesson well by watching the changes that have taken place in the Chesapeake Bay. Scientists studying the decline of the bay discovered the effects of human influences as early as the 1970s.

Many land use activities affect water quality. Poor land management and development practices lead to increased storm water runoff, which picks up pollutants as it flows to the bay. These pollutants include the following:

- Sediment (caused by the erosion of land), which clouds waterways, prevents light from reaching aquatic plants, and clogs fish gills.
- Nutrients from a variety of sources — including fertilizer applications to lawns and farm fields, animal waste, and septic systems — which can lead to algal blooms in waterways, depleting oxygen and shading beneficial aquatic plants.
- Toxic substances — including metals, pesticides, household chemicals, and deicing materials — which can cause health problems for both aquatic life and people.
- Pathogens from human and animal waste — such as bacteria and viruses — which, like toxic substances, can pose a health risk for aquatic life and people.

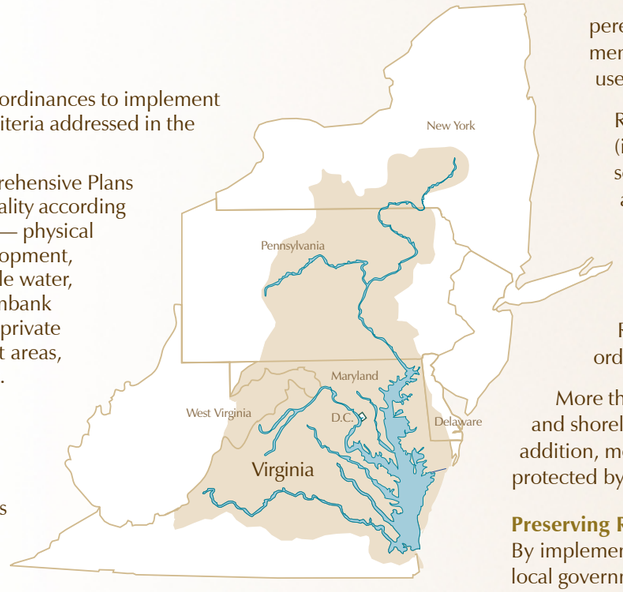
Although Virginia and the other bay communities have made great strides in improving water quality in the bay, the future brings even greater challenges.

Local Bay Act Programs

All 84 of the Tidewater localities identified in the Bay Act are implementing local Bay Act Programs. Although Tidewater localities are required to adopt and implement the Act, local governments outside Tidewater may also adopt Bay Act Programs.

Adopting and implementing a local program takes place in several phases, during which localities:

- Map environmentally sensitive lands.
- Develop or amend ordinances to implement the Performance Criteria addressed in the Regulations.
- Amend their Comprehensive Plans to address water quality according to five policy areas — physical constraints to development, protection of potable water, shoreline and streambank erosion, public and private access to waterfront areas, and redevelopment.
- Evaluate their local ordinances and policies to identify and address any conflicts and barriers to protecting water quality.



"A river, like all natural forces, is not indifferent or unresponsive to humankind . . ."

— From *Call of the River* by Page Stegner

A Comprehensive Approach to Water Quality — Protecting Streams, Rivers, and the Bay

By addressing the many types of land use and development in the watershed, local Bay Act Programs are able to provide a comprehensive approach for protecting water quality from the effects of nonpoint source pollution. The result is cleaner water locally and a cleaner bay. Tidewater localities implementing Bay Act Programs have experienced the many water quality advantages they provide.

Protecting Wetlands and Other Environmentally Sensitive Lands . . .

Bay Act Programs manage land uses on environmentally sensitive lands, known as Chesapeake Bay Preservation Areas (CBPAs). These lands are classified into two categories, Resource Protection Areas (RPAs) and Resource Management Areas (RMAs).

RPAs include tidal wetlands, nontidal wetlands connected by surface flow and contiguous to tidal wetlands or perennial streams, tidal shores, and 100-foot vegetated buffers adjacent to these features and along both sides of perennial streams (riparian buffers). Development within RPAs is limited to water-dependent uses and redevelopment.

RMAs include floodplains, highly erodible soils (including steep slopes), highly permeable soils, nontidal wetlands not included in RPAs, and any other lands the locality deems necessary to protect the quality of state waters. Development is permitted within RMAs, but developers must adhere to the Performance Criteria contained in the Regulations and incorporated into local ordinances.

More than 10,000 miles of Virginia's streambanks and shorelines are protected under the Bay Act. In addition, more than 330,000 acres of wetlands are protected by the Act.

Preserving Riparian Buffers . . .

By implementing the buffer requirements of the Bay Act, local governments have helped to preserve, and create, an estimated 635,000 acres of riparian buffers. These buffers help to filter pollutants from runoff before they enter streams, rivers, ponds, lakes, and ultimately the Chesapeake Bay. They capture up to 97 percent of the sediment, 80 percent of the nitrogen, and 77 percent of the phosphorus in runoff.

Controlling Erosion . . .

By reducing the state erosion and sediment control threshold from 10,000 square feet to 2,500 square feet, Bay Act localities are addressing erosion control on more development sites. This means less sediment in local waterways and the bay.

Maintaining Septic Systems . . .

By requiring septic systems to be pumped out at least once every 5 years, Bay Act localities help avoid septic system failures, which can pollute local waterways. As an added precaution, these localities also require a reserve sewage disposal site that can be used in the event of a failure.

Managing Storm Water Runoff . . .

By requiring development plans to incorporate Best Management Practices (BMPs) to protect water quality, Bay Act localities control the impacts of urban runoff. They also require maintenance agreements to ensure that the BMPs used to control pollutant loads continue to function properly.

Stormwater ponds protect water quality by slowing and filtering runoff from developed areas.

Improving Development Designs . . .

The Chesapeake Bay Local Assistance Department's "Better Site Design in Virginia" initiative is helping Bay Act localities achieve the Act's three General Performance Criteria — minimizing land disturbance, preserving indigenous vegetation, and minimizing impervious cover. In Tidewater, less clearing and paving is translating into improved local waters and reduced costs for developers.

Developing Farm Plans . . .

By preparing Soil and Water Quality Conservation Plans, Soil and Water Conservation Districts (SWCDs) help local farmers reduce the amount of sediment, nutrients, and pesticides entering local waterways.

Conservation practices and buffer preservation on agricultural lands help minimize water quality impacts.

To date, nearly 5,500 conservation plans, covering nearly 270,000 acres of land, have been approved in Tidewater. Implementation of these conservation plans and their associated BMPs has resulted in the removal of 1.3 million pounds of nitrogen, 90,000 pounds of phosphorus, and 27 million pounds of sediment from local waterways.

Managing Timber Harvesting . . .

Local governments in Tidewater coordinate closely with local foresters to ensure that landowners and timber companies implement water quality BMPs. Timbering projects are exempt from the Act only if they implement these BMPs.

In an effort to protect riparian buffers adjacent to streams, timber harvesting is limited to 50 percent of the trees within Streamside Management Zones